

WHAT IS CLAIMED IS:

1 1. A method for testing a set of interface connections in a reconfigurable
2 device between an IP core implementing at least one specialized operation and a set of
3 functional blocks adapted to implement general-purpose logic devices, the method
4 comprising:

5 creating a test program including a set of test data and a test configuration
6 adapted to configure the set of functional blocks to implement a set of boundary scan
7 registers connected with the interface connections of the IP core;

8 configuring the reconfigurable device according to the test configuration;

9 inputting the test data into the reconfigurable device to create a set of test
10 results; and

11 analyzing the set of test results to determine the integrity of the set of interface
12 connections.

1 2. The method of claim 1, wherein the set of boundary scan registers
2 include a plurality of shift registers connected in series, wherein each shift register is adapted
3 to be connected with an interface connection of the IP core.

1 3. The method of claim 2, wherein a first portion of the plurality of shift
2 registers is adapted to be connected with a set of input interface connections of the IP core
3 and a second portion of the plurality of shift registers is adapted to be connected with a set of
4 output interface connections of the IP core.

1 4. The method of claim 1, wherein the test configuration is defined with a
2 hardware description language representation.

1 5. The method of claim 4, wherein the creating a test program includes:
2 combining the hardware description language representation of the test
3 configuration with a hardware description language representation of the IP core to form a
4 test hardware description; and
5 analyzing the test hardware description to create a set of test data.

1 6. The method of claim 5, wherein creating a test program further
2 includes analyzing the test hardware description and the set of test data to create a set of
3 expected test results; and

4 wherein analyzing the test results includes comparing the set of test results
5 with the set of expected test results.

1 7. The method of claim 5, wherein analyzing the test hardware
2 description is performed using automated test program generation software.

1 8. An information storage medium including a set of instructions adapted
2 to operate an information processing device to perform a set of steps, the set of steps
3 comprising:

4 creating a test program including a set of test data and a test configuration
5 adapted to configure the set of functional blocks to implement a set of boundary scan
6 registers connected with the interface connections of the IP core;

7 configuring the reconfigurable device according to the test configuration;
8 inputting the test data into the reconfigurable device to create a set of test
9 results; and

10 analyzing the set of test results to determine the integrity of the set of interface
11 connections.

1 9. The information storage medium of claim 8, wherein the set of
2 boundary scan registers include a plurality of shift registers connected in series, wherein each
3 shift register is adapted to be connected with an interface connection of the IP core.

1 10. The information storage medium of claim 9, wherein a first portion of
2 the plurality of shift registers is adapted to be connected with a set of input interface
3 connections of the IP core and a second portion of the plurality of shift registers is adapted to
4 be connected with a set of output interface connections of the IP core.

1 11. The information storage medium of claim 8, wherein the test
2 configuration is defined with a hardware description language representation.

1 12. The information storage medium of claim 11, wherein the creating a
2 test program includes:

3 combining the hardware description language representation of the test
4 configuration with a hardware description language representation of the IP core to form a
5 test hardware description; and

6 analyzing the test hardware description to create a set of test data.

1 13. The information storage medium of claim 12, wherein creating a test
2 program further includes analyzing the test hardware description and the set of test data to
3 create a set of expected test results; and

4 wherein analyzing the test results includes comparing the set of test results
5 with the set of expected test results.

1 14. The information storage medium of claim 12, wherein analyzing the
2 test hardware description is performed using automated test program generation software.

1 15. An information storage medium including a test configuration for
2 configuring a reconfigurable device, the reconfigurable device having an IP core
3 implementing at least one specialized operation and a set of functional blocks adapted to
4 implement general-purpose logic devices, the test configuration comprising a configuration
5 of the set of functional blocks implementing a set of boundary scan registers connected with a
6 set of interface connections of the IP core.

1 16. The information storage medium of claim 15, wherein the set of
2 boundary scan registers include a plurality of shift registers connected in series, wherein each
3 shift register is adapted to be connected with an interface connection of the IP core.

1 17. The information storage medium of claim 16, wherein a first portion of
2 the plurality of shift registers is adapted to be connected with a set of input interface
3 connections of the IP core and a second portion of the plurality of shift registers is adapted to
4 be connected with a set of output interface connections of the IP core.

1 18. The information storage medium of claim 15, wherein the test
2 configuration is defined with a hardware description language representation.

1 19. The information storage medium of claim 15, further including a set of
2 test data adapted to be input into the IP core via the set of functional blocks implementing the
3 set of boundary scan registers.

1 20. The information storage medium of claim 15, further including a set of
2 expected test results.